Ultrasonic Liposuction Unit
Model S-48E

User Manual

Overview
Cellulite and associated obesity issues have become one of the major problems in developed countries.

In China, it is estimated that at least ½ billion people are seeking some form of body slimming modality. Approximately 30% of the people in Beijing, Shanghai and Guangzhou died last year from diseases related to obesity, overshadowing deaths from natural causes.

Unfortunately, many slimming products that have tried to fill this demanding market are unscientific and use techniques that simply don't work or reduce fat in the short term with no sustainable results. Some devices function in ways that actually do damage to the body.

What Does Obesity Mean?
Basically, obesity refers to an excess of mature fat cells situated in the underlying tissue between the sub-dermal layer and the muscle layer of various parts of the body. While the male metabolism will generally tend to deposit these cells around the abdomen with a higher concentration to the anterior of the abdomen, women

(since fat cells help process estrogen for the reproductive system) deposit a greater number of fat cells around the abdomen, hips, thighs and buttocks.

There are two general categories of obesity – primary and secondary. The causes of primary obesity relate to eating habits, psychological issues, education and the availability of low fat and low sugar foods. Primary obesity accounts for 99% of all obese people. Secondary obesity is more complicated, although it accounts for only 1% of the population, the causes have been speculated to be genetic, glandular or viral. Genetic obesity is where the person has a genetic disorder or genetic predisposition to accumulate fatty tissue in areas of the body. Glandular obesity is where severe weight gain is from a disorder related to malfunctions of the pituitary gland, thyroid gland, gonadotrophic disorder, as well as Cushing's syndrome all of which are serious medical conditions. Viral obesity is not yet accepted by some parts of the medical community but basically (as discovered by Indian Medial Research) is where a type of bird flu virus cross contaminates to humans. The virus, once in the cells will cause immature fat cells to become mature and therefore absorb fat. People who show the particular antigen for the virus experience abnormal weight gain despite their diet. Discovered in the '70's it is estimated that this accounts for about 10% of obese people in the United States, 3% in the United Kingdom and as much as 40% in India – other countries have not been studied.

In conclusion, with most cases of primary obesity and just about all cases of secondary obesity, it is virtually impossible for the person to lose a sustainable amount of weight due to factors such as life style, family history, inability to exercise, or medical reasons.
This equipment represents a major step in returning these people to a state where good health and vitality can be maintained.

Working Theory of the Equipment
There are three basic functions within the unit that are used together to bring about lasting effective results.
First – The use of a high powered, large diameter, ultrasonic emitter that produces sound waves in the order of 40KHz (40 thousand pulses per second). These waves are focused to emit a maximum effective concentration of energy approximately 1 to 1½ inches (25-35mm) below the skin into the layers of fatty tissue below the sub-dermal tissue. The vibrational intensity of these waves split or "crack" the cell membranes that retain the fat. Within the cells, the fat, stored as triglycerides is broken down into glycerin and fatty acid.
Second – The use of a similar ultrasonic emitter that produces a high magnitude wave in the order of 0.5MHz (500,000Hz), in other words, radio frequency energy. This actually liquefies the already broken down triglycerides into something similar to fine oil which then becomes part of the interstitial fluid. The vibration together with the physical movement of the head on the tissue pushes the liquid fat into the lymphatic vessels that make up the body's naturally functioning drainage system. The heat generated within the cells by this treatment has the additional effect of dehydrating and shrinking the fat cell. The shrunken cell will no longer function and no longer take up the same space. The aesthetic result is that there is less tissue bulk present than before. This means that cellulite will visibly disappear, and with the aid of a trained practitioner, the unit can be used to remove and reduce specific areas and allow the person to sculpt their body shape as desired.
Third – The unit employs a system of specially designed heads that are strapped to the area that has been treated. These heads are a combination of electrical stimulation and visible red monochromatic light in the order of 650nM wavelength. Together, this system has been shown to dramatically improve the circulation and movement of fluid within tissue. This improves the ability of the body to move the fluid through the lymphatic vessels. Once in these vessels it is carried normally to the liver where it is excreted as part of the bile through the digestive system along with other waste products of the body.
Additionally, the red light and oriented electrodes is to contract the collagen matrix that lies below the skin. This has the effect of tightening the skin to further enhance the slimming effect of the procedure and bring about greater elasticity and youthfulness to the skin.

Advantages of Ultrasonic Liposuction

1. This system is the most advanced in the world.
2. It is suitable for all types of skin and all kind of people.
3. It can be used to "body shape" rather than simply lose weight.
4. It is non-invasive, there is no bruising, no discomfort and no recuperation time.
5. It is easily operated by the practitioner – more professional.
6. Practitioner training is fast and simple – less training cost.
7. Low investment costs with fast returns on your investment.

Unit Dynamics

Control Panel

SHIFT – To go back from the current menu selection.
LEFT & RIGHT – To increase or decrease the selected setting.
UP & DOWN – To move up or down within the menu functions.
ENTER – To either enter a menu selection or to start or stop the unit's operation.

Unit's Attachments
Strong Ultrasound Head (40KHz)
Marked as "CRACK"

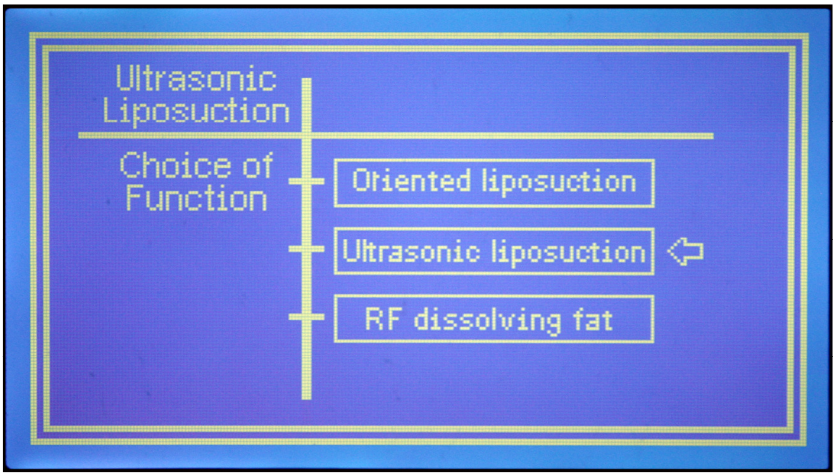
RF Ultrasound Head (500KHz)
Marked as "MELT"

Oriented Cellulite Stimulator Heads with Color Emitters

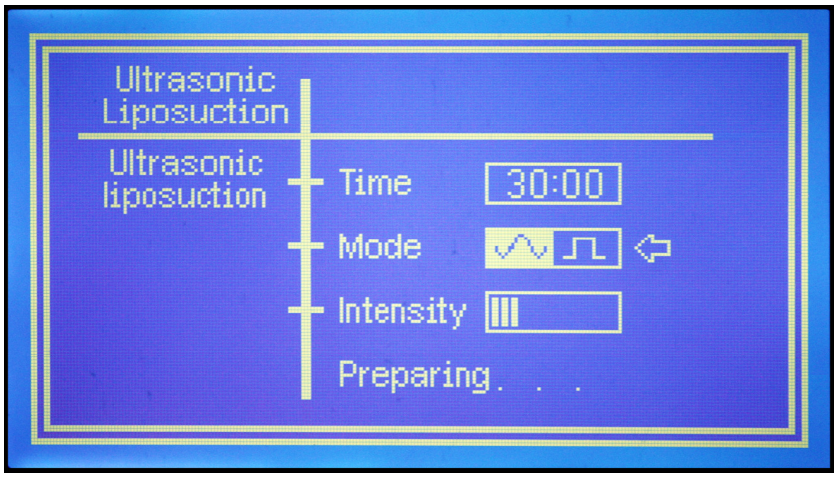
Operational Steps

- Plug in the power and switch the unit on via the mains switch located at the rear of the unit. The LCD display will illuminate with the base menu.
- After selecting the appropriate language setting, press "ENTER" to move to the next step.
- After entering the main menu, use the UP or DOWN buttons to choose the required function – Ultrasonic Liposuction, RF Dissolving Fat or Oriented Liposuction. In a normal treatment Ultrasonic Liposuction is performed first.

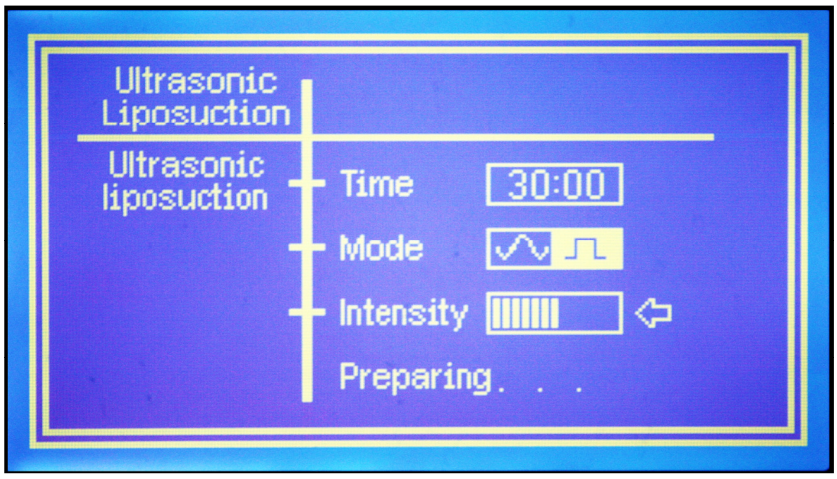
- **Ultrasonic Liposuction** –



On entering this menu, use the UP or DOWN buttons to select “Ultrasonic Liposuction” then press ENTER to enter this menu. Use the UP or DOWN buttons to select the aspects of this menu.



Select the “Time” and then using the LEFT or RIGHT buttons, determine the length of time required then move DOWN to select “Wave Shape” Two wave shapes are available, Continuous (indicated by a sine wave) or Intermittent (indicated by a square wave). Continuous runs the ultrasound head continuously and is able to penetrate the deeper layers where the fatty tissue is located above muscle. Intermittent turns the head on and off about twice per second and has a more profound effect on sub-dermal fat that lies just below the skin.



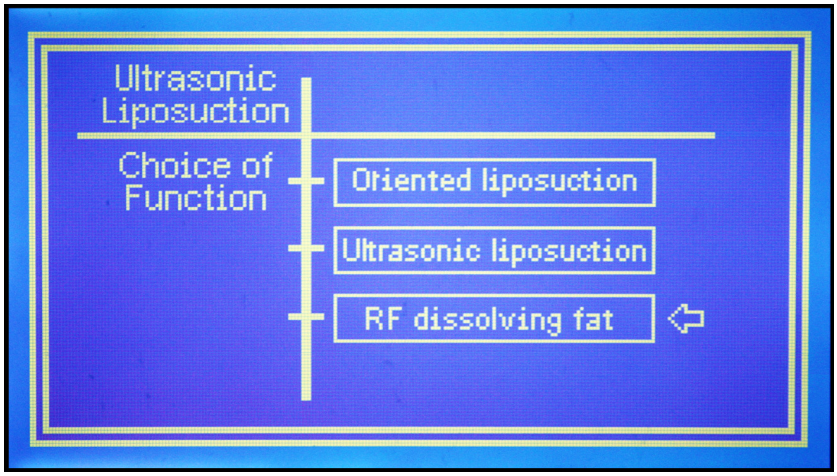
Then move DOWN to select “Intensity” and then, by using the LEFT and RIGHT buttons adjust the required power setting you wish to use. When finished note the bottom of the display will read “Preparing”.

To begin treatment, press ENTER. While the head is in operation the bottom of the display will change to “Working” at which point the timer will begin to count down. *It is advised that the ultrasound head is not held without direct contact with the skin for any length of time as there is a possibility that damage to the head could occur.*

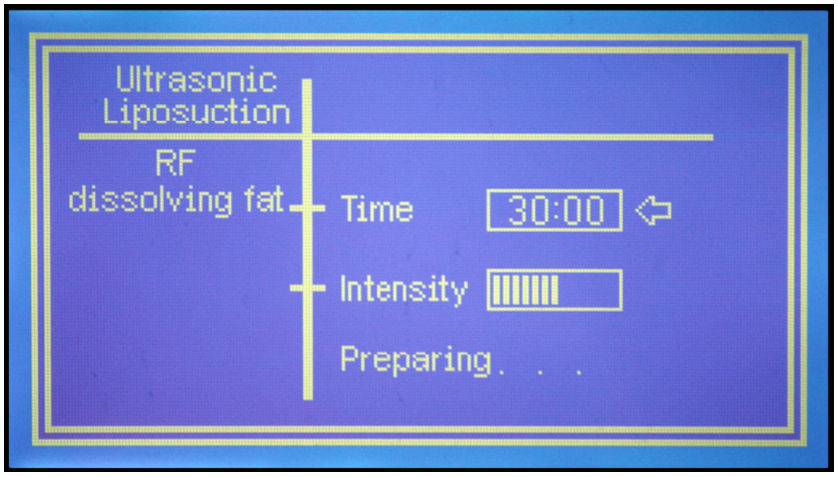
- Apply a reasonable amount of conductive jell - usually an aqua-jell or ultrasound jell, this could be mixed with a skin or beauty preparation if required.
- To finish the treatment, the timer will reach zero and an audible signal will indicate that the head is no longer in operation. If a pause is required at any time, simply press the ENTER button and the display will switch from “Working” to “Preparing” indicating that the head is not in operation.

- Upon completion of this step, press SHIFT to return to the main menu to begin the next selection – Move the arrow to RF Dissolving Fat and press ENTER to enter this menu.

- **RF Dissolving Fat** –



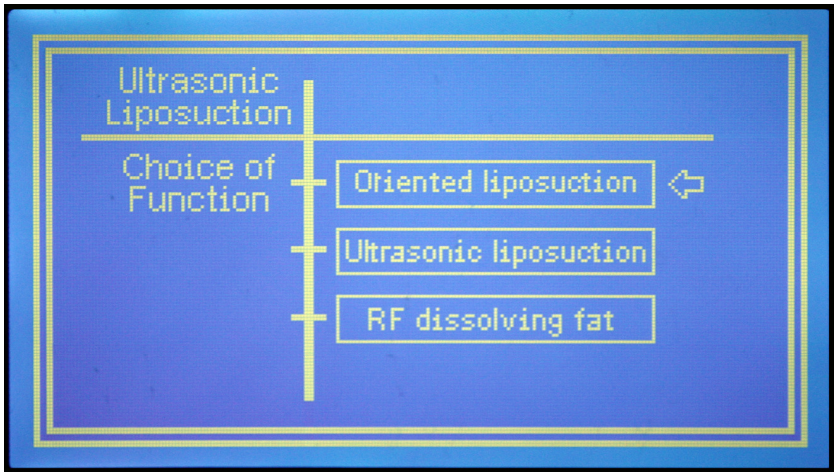
- Use the UP or DOWN buttons to select the aspects of this menu.



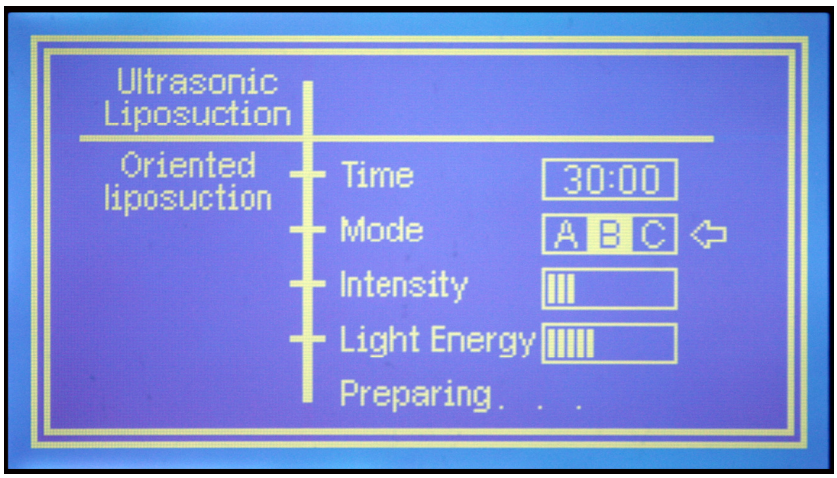
- Select the "Time" and then using the LEFT or RIGHT buttons, determine the length of time required then move DOWN to select "Intensity" and then, by using the LEFT and RIGHT buttons, adjust the required power setting you wish to use.
- When finished note the bottom of the display will read "Preparing". To begin treatment, press ENTER. While the head is in operation the bottom of the display will change to "Working" at which point the timer will begin to count down. *It is advised that the ultrasound head is not held without direct contact with the skin for any length of time as there is a possibility that damage to the head could occur.*
- Apply a reasonable amount of conductive jell - usually an aqua-jell or ultrasound jell, this could be mixed with a skin or beauty preparation if required. Please note that with this head the frequency is exceptionally high and as a result the head may get reasonably hot, this is normal, however, **if there is insufficient conductive jell between the head and the skin the patient may feel a burning sensation or other discomfort.**
- To finish the treatment, the timer will reach zero and an audible signal will indicate that the head is no longer in operation. If a pause is required at any time, simply press the ENTER button and the display will switch from "Working" to "Preparing" indicating that the head is not in operation.

- Upon completion of this step, press SHIFT to return to the main menu to begin the next selection – Oriented Liposuction.

- **Oriented Liposuction** –



Use the UP or DOWN buttons to select the aspects of this menu. Select the "Time" and then using the LEFT or RIGHT buttons, determine the length of time required then move DOWN to select "Mode" and then, by using the LEFT and RIGHT buttons select either A,B or C which sets the control mode used for the electrical stimulation part of this treatment.



a. Select "A" if it is required to stimulate the lymph nodes and lymphatic vessels surrounding the intestines and abdominal region. This emits a single pulse at about 1Hz (pulse per second) which contracts the involuntary muscles and helps to accelerate the movement of fluid though the lymph system.
b. Select "B" if you require stimulation of soft fatty tissue that has a flabby consistency. This produces a faster pulse of around 2Hz. This has been shown to have the greatest effect this type of tissue.
c. Select "C" if you need to stimulate fatty tissue that has a more solid consistency usually over muscle areas such as cellulite deposits over the hips and thighs. The unit will produce a variable pulse scaling from 10Hz to 20Hz and then back again. The idea is to stimulate the tissue contractions as well as the underlying muscle to hasten the movement of fluid through the lymph system.

Then move down to “Intensity” and then, by using the LEFT and RIGHT buttons, adjust the required power setting you wish to use for the electrical stimulation this setting can be changed while the unit is in operation so it is often preferable to adjust this setting using feedback from the patient. Then move down to “Light Intensity” and then, by using the LEFT and RIGHT buttons, adjust the required power setting you wish to use for the photon stimulation, this setting can also be changed while the unit is in operation but generally it is used at full power since the patient will feel no discomfort or side effects from this aspect of the treatment. When finished note the bottom of the display will read “Preparing”. To begin treatment, press ENTER. While the unit is in operation the bottom of the display will change to “Working” at which point the timer will begin to count down.

- Upon completion of this step, press SHIFT to return to the main menu and the unit can now be switched off via the mains switch located at the rear of the unit.

Working Procedures *(Over-View)*

First: Configure the unit to desired settings using the “Ultrasonic Liposuction” section of the menu. Apply a reasonable amount of ultrasonic jell or other suitable preparation to the area of treatment. Using the **“CRACK”** ultrasonic head, apply the head to the skin and depress the ENTER button to begin operation.

Second: Configure the unit to desired settings using the “RF Dissolving Fat” section of the menu. Apply a reasonable amount of ultrasonic jell or other suitable preparation to the area of treatment. Using the **“MELT”** ultrasonic head, apply the head to the skin and depress the ENTER button to begin operation.
(Commonly, but not necessarily, both heads are used for the same period of time).

Third: Configure the unit to desired settings using the “Oriented Liposuction” section of the menu. Apply a small amount of ultrasonic jell or other electrically conductive preparation to three chrome electrodes on each head being used. Not all of the six heads have to be used. The heads are normally used with the light power setting at full, the electrical stimulation setting should be increased to maximum patient comfort.
Press the ENTER button to begin operation. As a rule of thumb, timing of this step is nominally half to three quarters of the treatment time used for the ‘Melt’ head.

Please note: Ultrasound heads of any description do not function well if held in mid-air. There is a possibility that the energy can feed back and damage the head. Keep the ultrasound head in good contact with the skin as much as possible while in the ‘working’ mode.

On abdominal areas, move slowly in small circles with a smooth consistent movement. I would emphasize slowly in most cases since it takes a reasonable amount of energy to break cell membranes and/or emulsify fat, therefore, by moving the head too fast will result in less energy being absorbed by individual cells and a corresponding reduction in the amount of tissue being affected.

Working Procedures *(General Regions)*

Abdominal Area: Generally, begin (with the ‘CRACK’ Head set to ¾ or full power) on the outer abdominal area and move toward the centre line of the body on each side. Pay attention to the areas that may have less fatty tissue underlying and make sure that you have a reasonable anatomical understanding of the underlying organs and their depth. Move the head in small circles slowly working over the area required. As you are moving the head you are also pushing the liquidized fat (glycerol) towards the centerline of the body where there are a greater number of lymphatic vessels capable of removing the glycerol. Remember, the large intestine literally circles the abdominal area and travels in a clockwise direction from the lower left pelvic quadrant straight up to just under the ribs and across to the right lower rib cage and then down to the left pelvis. Make sure you move the heads in the same general direction. Traveling in the opposite direction could cause a blockage or other problems. Repeat the process using the

'MELT' head, in this instance set to ¾ or full power. Generally, base your treatments on using both the heads for about the same time each – for an abdominal area it is recommended 20 minutes for each head followed by 10-20 minutes of photo electric stimulation. When using the Oriented Liposuction on this area, the aim is to stimulate the large intestine to help remove waste. Remind the patient that these treatments rely on the lymphatic's to drain the glycerol and they rely largely on physical movement, so a regular regime of light abdominal exercises will help speed up the process of elimination enormously.

Posterior Buttocks and Lower Back

Treatment times are completely up to the practitioner but it is recommended that you spend at least 15 minutes over each buttock to get a good result. Given the lower back is about the same surface area, a similar time is appropriate. Remember, results are better with slow deliberate movements keeping the whole surface of the head in good contact with the skin. If you are working over the Kidney area them move a little faster or switch the unit to intermittent (Crack head only) so as not to penetrate too deeply and possibly affect the Kidneys. Remember, moving the head over the body is, in its self, a form of massage and will have a tendency to help the lymphatic's. As a result direct the more forceful movements towards the abdominal area. In other words, if you are working on the legs, then move generally upwards. When using the 'MELT' head over the Kidneys it would be advisable to reduce the power level to about half or possibly less to avoid overheating the underlying tissue. Again 15 minutes over each area is recommended.

When using the Oriented Liposuction place the heads evenly over both sides of the body. Use conductive jell to get a good electrical connection with the skin and use the supplies stretch bands to hold them in place. Since the posterior buttocks and lower back lies generally over muscle it is advisable to select the "C" setting. It is suggested that 20 minutes of light and electrical stimulation over the whole surface of the buttocks area would be appropriate. Normally the light therapy is set to high and the electrical stimulation set to a high level in relation to patient comfort.

Upper Legs and Thighs

Spend at least 15 minutes over each leg to get a good result. Remember, results are better with slow deliberate movements keeping the whole surface of the head in good contact with the skin. If you are working over areas with less fatty tissue then move a little faster or switch the unit to intermittent (Crack head only) so as not to penetrate too deeply. Remember, moving the head over the body is a form of massage so move in straight lines with the more forceful motion toward the heart. When using the 'MELT' head over thinner tissue it would be advisable to reduce the power level to about half or possibly less to avoid overheating the underlying tissue. Again 15 minutes over each area is recommended. If you feel the area or the head getting overly hot then either stop or reduce the power setting.

When using the Oriented Liposuction place the heads evenly over both sides of the body. Use some conductive jell to get a good electrical connection with the skin and use the supplies stretch bands to hold them in place. Since these areas are obviously over muscle it is advisable to select the "C" setting. It is suggested that 20 minutes of light and electrical stimulation over the whole surface of the buttocks area would be appropriate. Normally the light therapy is set to high and the electrical stimulation set to a high level in relation to patient comfort.

Lower Legs (Calves only)

Spend at least 8 minutes over each calf to get a good result. Remember, results are better with slow deliberate movements keeping the whole surface of the head in good contact with the skin. If you are working over areas with less fatty tissue, especially the lower calf, then move a little faster or switch the unit to intermittent (Crack head only) so as not to damage tendons or ligaments. Again, move the head in straight lines with the more forceful motion upwards. When using the 'MELT' head over the calf tissue it would be advisable to reduce the power level to about ¾ or half to avoid overheating the underlying

tissue. This, of course, will depend on the size of the patient and the experience of the practitioner. Again 15 minutes over each calf is recommended. If you feel the area or the head getting overly hot then either stop or reduce the power setting.
When using the Oriented Liposuction place the heads evenly over both calves. Use some conductive jell to get a good electrical connection with the skin and use the supplied stretch bands to hold them in place. Since these areas are obviously over muscle it is advisable to select the "C" setting. It is suggested that 10 - 20 minutes of light and electrical stimulation would be appropriate. Normally the light therapy is set to high and the electrical stimulation set to a high level in relation to patient comfort.

Upper Back and Sides
Aimed at treating the flabby tissue under the arms and around the 'Bra strap'. This tissue is generally not very deep and does not have a lot of bulk to it, as a result the ultrasound waves will often penetrate too deep if you're not careful. It is advisable to adjust the power setting on both heads to approximately half or even less, depending on the stature of the patient, for at least the first treatment. Possibly increasing the power level on subsequent visits. In this manner, you can accurately assess the proper settings and insight and experience in treating different areas of the body on different patient statures.

Treat each side for approximately 10 to 15 minutes with the 'Crack' as well as the 'Melt' heads. With the 'Melt' head, pay close attention to the heat generated during the treatment. It is not advisable to heat the tissue to over 40 degrees Celsius, otherwise damage to the collagen matrix in the sub-dermal layer could occur. The amount of heat generated is directly proportional to the power setting used. Generally, if the tissue becomes overly red and very warm, then it's time to move on to another area. Although the ultrasound waves on both heads are focused to provide a maximum of intensity at a depth to about 30mm one should always pay attention to underlying organs and tissue. In this case there are ribs, plural cavity (filled with fluid), plural membrane and lung tissue. These tissues are quite resilient and will absorb a great deal of energy, however, the "go slow" approach is always wise.